

Remarks

Claims 1-42 are pending in the application, and are subject to a restriction requirement. The invention is related to a novel carrier, e.g., a peptide-conjugate, for transporting the peptide across cell membranes. Applicants previously elected the claims of Group I (claims 1-22) in response to the restriction requirement mailed September 13, 2001. In response to a further restriction requirement mailed June 4, 2002 (paper no. 9), Applicants selected as representative species the ten sequences SEQ ID NOS:1, 2, 6, 14, 29, 30, 32, 55, 56, and 57. Furthermore, in response to the election of species requirement mailed on October 1, 2002 (paper no. 13), Applicants selected the species wherein R is C₉ alkyl, X is C=O, and n is 1. However, the Examiner has vacated the previous office actions in view of yet another restriction requirement mailed January 29, 2003.

Response to Restriction Requirement

Responsive to the Restriction Requirement mailed January 29, 2003 (paper no. 15), applicants hereby elect the claims of Group I (claims 1-22), drawn to peptide conjugates and pharmaceutical compositions, classified in class 530, subclass 402, with traverse.

The Examiner has also required that if election is made to the claims of Group I, selection of **one** formula is required. Applicants select, with traverse, the formula wherein R is C₂₋₁₈ alkyl, X is C=O, and n is 1; thus the elected formula is (C₂₋₁₈ alkyl)CO-peptide. In addition, the Examiner has required that a **single** compound be elected. Applicants select, with traverse, the compound within the elected formula wherein the peptide is SEQ ID NO:56. Thus the elected compound is (C₂₋₁₈ alkyl)CO-SEQ ID NO:56. Applicants traverse the current restriction requirement for the reasons outlined below.

Traverse

The Examiner alleges at page 2 in the Detailed Action that the recited variables have different structures and the search for the sequences would be unduly burdensome. The Examiner further asserts that the requirement to elect **one** formula and to elect a **single** compound is not to be construed as a requirement of election of species. Particularly, it is the opinion of the Examiner that each of the conjugates recited in alternative form is not a member of a single genus of invention, but constitutes an independent and patentably distinct invention. Applicants respectfully disagree.

Restriction is proper only if the pending claims represent independent or distinct inventions, *and* there is no serious burden in searching and examining the entire application. MPEP §803. Here, Examiner cannot show that the structural formula and compounds of the invention represent independent or distinct inventions, and that there is a serious burden on searching and examining the specified claim groups in one application.

As is shown below, the restriction is improper because the claims are directed to related subject matter and are not independent and distinct. Applicants traverse based on the fact that all of the claims of Group I are drawn to a core formula, **(R-X)_n-peptide**, wherein elements of R, X, and n are specifically recited in the claims and representative compounds and peptide sequences are exemplified throughout the specification as filed. Furthermore, Applicants note that the Examiner has classified the claims of Group I under identical class and subclass.

Applicants further traverse restriction of the claims into three Groups (I, II, and III), because the claims of Groups I, II, and III are drawn to compounds of the same general formula, (R-X)_n-peptide, or to the core formula (R-X)_n-molecule (claims 36-42). Thus, to the extent discussed below, the restriction requirement is improper and should be withdrawn.

Conjugates of the Formula (R-X)_n-Peptide Are Not Independent Inventions

35 U.S.C. § 121 requires restriction when a patent application contains claims that are independent and distinct. Claims 1-35 are directed to peptide conjugates of the formula (R-X)_n-peptide as recited in claim 1, or to their use.

According to MPEP § 802.01:

The term “independent” (i.e., not dependent) means that there is no disclosed relationship between the two or more subjects disclosed, that is, they are unconnected in design, operation, or effect, for example: (1) species under a genus which species are not usable together as disclosed; or (2) process and apparatus incapable of being used in practicing the process.

Here, each peptide-conjugate comprises a conjugate designed in the same way to achieve the desired effect, i.e., entry into a cell. For example, all peptide-conjugate compounds of the invention are drawn to the core formula (R-X)_n-peptide as recited in claim 1 and its dependent claims, and delivery of the peptides across the cell membrane is

enhanced by virtue of the $(R-X)_n$ groups. Thus, all of the presently claimed peptide-conjugate compounds are connected in design, operation, and effect. The claimed peptide-conjugate compounds can also be used together to deliver peptides across a cell membrane. Clearly, claim 1 and its dependent claims are all related, i.e., they are not independent. Thus, restriction of the peptide-conjugate claims as being independent is improper.

Conjugates of the Formula $(R-X)_n$ -Peptide Are Not Distinct Inventions

Inventions are distinct only if they are 1) classified separately, 2) have acquired separate status in the art when classified together, or 3) require a different field of search (i.e., it is necessary to search for one invention in places where no pertinent art exists for the others). MPEP § 808.02. Moreover, according to MPEP § 802,

“The term “distinct” means that two or more subjects as disclosed are related, for example, as combination and part (subcombination) thereof, process and apparatus for its practice, process and product made, etc., but are capable of separate manufacture, use, or sale as claimed, . . .”

Contrary to the Examiner's assertion at page 2 of the Detailed Action that the compounds of Group I are distinct inventions, the subject matter of the claims of Group I is not capable of separate manufacture, use, or sale, because all of the claims recite, either directly or indirectly, an $(R-X)_n$ -peptide conjugate.

Moreover, the Examiner has classified all Group I claims under class 530, subclass 402. Thus, the compounds recited in the Group I claims are not classified separately under § 808.02(A).

The representative compounds of the formula $(R-X)_n$ -peptide also do not represent “separate inventive effort” under § 808.02(B), as they all relate to the same basic formula for peptide-conjugate compounds of the invention, and all claimed compounds exhibit the same effect, i.e., enhanced entry into a cell.

Finally, the formula $(R-X)_n$ -peptide and the compounds of the invention encompassed by the formula also do not require a different field of search under § 808.02(C), because in performing a patentability search for a conjugate comprising $(R-X)_n$ -peptide (regardless of which R, X, or n or peptide is chosen), the Examiner will necessarily uncover the prior art pertaining to a peptide conjugate of the formula $(R-X)_n$ -peptide.

Therefore, it is unlikely that a search of one compound of the formula (R-X)_n-peptide would reveal no art that is pertinent to another.

For example, the R groups are all simple structures with a maximum of 18 carbons, selected from such groups as C₂₋₁₈ alkyls, C₂₋₁₈ alkoxys, C₂₋₁₄ alkylenyls, and simple cyclo groups such as cyclobutyl, cyclopentyl, and phenyl. Furthermore, X can only be C=O, O, or NH, depending on the location on the peptide to which the (R-X)_n group is attached. Therefore, requiring election of a single compound falling within that formula fails to satisfy any of the criteria set forth in MPEP § 808.02, and thus the compounds falling within the claimed formula do not represent distinct inventions.

Because compounds of the formula (R-X)_n-peptide are not independent and are not distinct inventions, restriction is therefore “never proper.” MPEP §§ 806 and 806.05.

There is no Serious Burden in Searching Conjugates of the Formula (R-X)_n-Peptide

Even assuming arguendo that variations of the formula (R-X)_n-peptide or the compounds of the invention falling within the formula represent independent or distinct inventions, restriction is not proper because there is no serious burden on the Examiner in searching the compounds as claimed in Group I.

According to MPEP § 803 (emphasis added), “a serious burden . . . may be prima facie shown if the examiner shows *by appropriate explanation* either separate classification, separate status in the art, or a different field of search as defined in MPEP § 808.02.” Examiner has given no explanation to support a contention that searching the compounds of Group I together poses a serious burden.

As discussed above, there can be no serious burden in searching the compounds of the formula (R-X)_n-peptide together because the compounds share the same core formula, are used for the same purpose, and are classified in the same class and subclass. Not only has the Examiner provided no reasoning or appropriate explanation to support the contention of a serious search burden, the Examiner merely states at page 4 that the general formula (R-X)_n-peptide represents distinct inventions which have different chemical properties, structures, and functions. The Examiner then asserts that the inventions have acquired a separate status in the art because, in his opinion, they have “recognized divergent subject matter.” The burden of appropriate explanation for undue search burden cannot be met,

where, as here, all compounds are classified in the same class and subclass and all compounds as claimed have the same core formula.

At page 4 of the Office Action, in section 6, the Examiner states that “[a]lthough considered burdensome, the SEQ ID NO. already elected will be examined with the one specific compound wherein X, R, and n are specifically chosen.” Applicants are confused as to this statement because at page 2 of the Office Action, in section 2, the Examiner states that this is a new restriction requirement. Thus, a SEQ ID NO: cannot be “already elected,” except for the one that is elected herein. Furthermore, a single SEQ ID NO: was never elected in the two previous responses by the Applicants. In fact, in the response to the restriction requirement dated June 4, 2002, applicants, as required by the Examiner, elected **ten** different SEQ ID NOS: from those recited in claim 18, namely SEQ ID NOS:1, 2, 6, 14, 29, 30, 32, 55, 56, and 57. Therefore, it is not clear what is meant by the Examiner's statement that “the SEQ ID NO: already elected” will be examined. However, as required by the present restriction requirement, a single formula and a single compound comprising SEQ ID NO:56 was elected above, with traverse.

For these reasons, Applicants respectfully request withdrawal of the restriction requirement as to selection of one formula and election of one compound in Group I.

Applicants also respectfully submit that if the Examiner has any doubt as to classification of the $(R-X)_n$ group and searching of the group, or of the formula of claim 1, perhaps the application should be referred to another art unit. According to MPEP § 815,

If some of the claimed inventions are classifiable in another art unit and the examiner has any doubt as to the proper line among the same, the application should be referred to the examiner of the other art unit for information on that point and such examiner should render the necessary assistance.

Claim Groups I, II, and III are not Distinct

At page 3 of the Detailed Action, the Examiner alleges that the methods of Groups II and III differ in their objectives, steps, and parameters. At pages 3 and 4, the Examiner further alleges that the invention of Group I is related to the inventions of Groups II and III as product and process of use. Apparently, the Examiner believes that the protein conjugate can be used in either of the processes of Groups II or Groups III and additionally, that the protein conjugate can be used to raise an antibody to a peptide.

Applicants also traverse the requirement for selecting a single formula if the claims of either Group II or III are elected, based on the same reasoning provided above against electing a single formula or single compound for Claim Group I.

As described above in detail, 35 U.S.C. § 121 requires restriction when a patent application contains claims that are independent and distinct. All of the claim groups of the present application are directed to a peptide-conjugate of the formula $(R-X)_n$ -peptide or its use, or to the use a molecule-conjugate of the formula $(R-X)_n$ -molecule. Further, the claims of Groups II and III do not represent distinct inventions because the claims of each group are drawn to the use a compound of the invention. Thus, the claim groups are not independent and distinct because each claim group recites use of compounds of the formula $(R-X)_n$ -peptide or $(R-X)_n$ -molecule. They are not distinct inventions because each conjugate is designed in the same way to achieve the same effect, i.e., enhanced entry into a cell. The only difference in the carrier portion of the formula is that for the molecule-conjugate formula $(R-X)_n$, X can be an atom, chemical bond, or chemical group. Thus, the R and n are the same for the core molecular-conjugate formula $(R-X)_n$ and the general peptide-conjugate formula $(R-X)_n$ -peptide.

A search for art related to a compound within these formulae would necessarily also reveal methods of using the compound. Thus, there would be no serious burden on the Examiner in searching the compounds and their use in Groups I, II, and III.

Conclusion

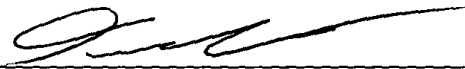
The compounds of the formula $(R-X)_n$ -peptide as claimed in Group I represent non-independent and non-distinct inventions that do not present a serious search burden for the Examiner, because each conjugate is classified in the same classification and because each conjugate is modified in the same way to achieve the same effect, i.e., to provide enhanced entry into a cell. Withdrawal of the restriction requirement with respect to election of a single formula and a single compound is therefore proper.

Applicants remind Examiner that MPEP §803 places the burden squarely on the examiner to “provide reasons and/or examples to support conclusions” presented in a restriction requirement. See also MPEP §808.02(B). Thus, if Examiner maintains any or all of the present restriction requirement as traversed, Applicants respectfully request that Examiner clearly articulate reasons and/or provide examples and evidence in support of his position.

Applicants believe this response to be fully responsive to the outstanding Restriction Requirement and request prosecution on the merits.

Respectfully submitted,

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